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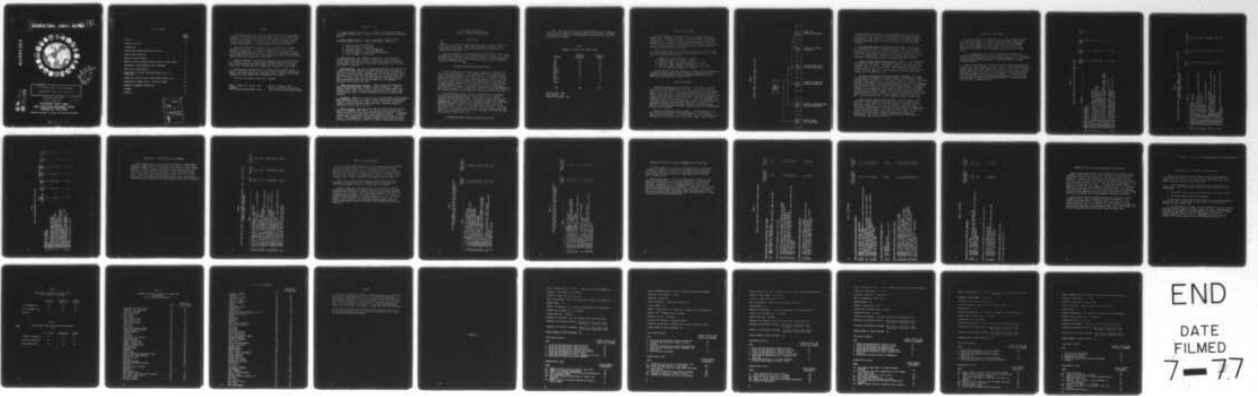
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ELECTRIC POWER LINE CAREER LADDER, AFSCS 54231, 54251, 54271, A--ETC(U)  
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ELECTRIC POWER LINE CAREER LADDER,  
AFSCs 54231, 54251, 54271, AND 54291.

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## PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Electric Power Line career ladder (AFSCs 54231, 54251, 54271, and 54291). The project was directed by USAF Program Technical Training, Volume 2, dated October 1975. Authority for conducting specialty surveys is contained in AFR 35-2. Computer outputs from which this report was produced are available for use by operating and training officials.

The survey instrument was developed by Capt Loretta Lee, Inventory Development Specialist. Mr. Reginald G. Nolte and Capt John X. Olivo analyzed the survey data and wrote the final report. This report has been reviewed and approved by Major Walter F. Kasper, Chief, Operations/Support Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas, 78236.

Computer programs for analyzing the occupational data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Because volume reproduction of this report is not feasible, distribution is made on a loan basis to air staff sections and major commands upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF  
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## SUMMARY OF RESULTS

1. Survey Coverage: Survey results are based on 559 personnel holding DAFSC 542X1 which represents 67 percent of the total assigned career ladder strength.
2. Career Ladder Structure: Six major groups were identified within the Electric Power Line career ladder (AFSC 542X1). These were:
  - I Power Line Installers/Repairers
  - II Technical Training Instructors
  - III Assistant Power Line Installers/Repairers
  - IV Apprentice Power Line Installers/Repairers
  - V Air Field Lighting Systems Installers/Repairers
  - VI Electric Power Line Supervisors
3. Job Satisfaction: Job interest was very high, with 85 percent of Electric Power Line ladder incumbents finding their jobs interesting. In terms of perceived utilization of talents and training, 80 percent of the respondents felt that their talents and training were being utilized fairly well to perfectly.
4. Job Progression: Time spent on supervisory tasks was very small at the 3- and 5-skill levels; however, 30 percent of the 7-skill level and 72 percent of the 9-skill level incumbents' job time was spent on these duties. The 7-skill level respondents performed nearly all of the technical tasks performed by the 5-skill level incumbents but also added many supervisory tasks. The 9-skill level personnel performed very few technical tasks; most superintendent level jobs involve supervisory and management responsibilities almost exclusively.
5. CONUS versus Overseas Differences: CONUS personnel performed more power line maintenance than did their overseas counterparts. Other differences between these groups primarily involve the percent members performing specific tasks. Overseas personnel tend to perform fewer tasks; this may be the result of contract maintenance services at many overseas locations.
6. STS Review: Comparison of the specialty training standard with the survey data indicated a fairly large number of tasks that should be considered for inclusion in the STS during the next revision. These tasks include such things as installing and maintaining power poles, overhead conductors, underground cables, and similar tasks.
7. AFM 39-1 Review: Comparison of the specialty description for Electric Power Line incumbents (AFSC 542X1) with the survey data indicated that there are several tasks which might be considered for deletion. These tasks include such things as installing cathodic protection systems. A reference should be made to performing operator maintenance on high reach and line trucks. A requirement for a government drivers license should be added to the specialty qualification section of the 542X1/71 specialty description.

OCCUPATIONAL SURVEY REPORT  
ELECTRIC POWER LINE CAREER LADDER  
AFSCs 54231, 54251, 54271 AND 54291

INTRODUCTION

↓ This is a report of an occupational survey of the Electric Power Line career ladder (AFSCs 54231, 54251, 54271 and 54291) conducted by the Occupational Survey Branch, USAF Occupational Measurement Center, from January 1976 through April 1977.

The report describes: (1) development and administration of the survey instrument; (2) summaries of tasks performed by airmen grouped by skill level, experience level, and similarity of tasks performed; (3) comparisons with current training and career field structure documents; and (4) recommended actions for further study. ↘

INVENTORY DEVELOPMENT AND ADMINISTRATION

The data collection instrument for the occupational survey was USAF Job Inventory AFPT 90-542-273. The inventory booklet was composed of two parts: a background information section in which job incumbents provided information about themselves; and a duty-task list section which assessed the relative amount of time spent on tasks performed in their current jobs. The latter section consisted of 435 tasks grouped under 15 duty headings. Thorough research of publications and directives, personal interviews with 15 subject-matter specialists at four bases, and written reviews from 57 experienced electric power line personnel contributed to the development of the survey instrument. A previous survey, USAF Job Inventory AFPT 90-542-076, was available along with the Occupational Survey Report dated 1 June 1972.

Consolidated base personnel offices in operational units worldwide received the inventory booklets for administration to job incumbents holding the DAFSCs identified above. Survey administration occurred from September 1976 through December 1976, based upon the August 1976 Uniform Airman Record. After supplying identification and biographical information, incumbents checked and rated the tasks performed in their current job. Tasks were rated on a 9-point scale showing relative time spent on each task compared to all other tasks performed in the current job. The ratings ranged from 1 (very-small-amount time spent) through 5 (about-average time spent) to 9 (very-large-amount time spent). Respondents did not rate tasks not performed in their current job.

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Table 1 gives the distribution of assigned personnel in the Electric Power Line career ladder as of November 1976 by major command. The number of respondents in the final sample represents 67 percent of the total AFSC population of 836 members.

TABLE 1  
COMMAND REPRESENTATION OF SURVEY SAMPLE

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
SAC	25	25
TAC	16	12
MAC	13	14
ATC	13	12
AFSC	6	6
USAFE	6	6
PACAF	6	6
AFLC	4	6
AAC	4	4
ADC	3	3
USAFSS	1	3
AU	1	1
OTHER	2	2
	-----	-----
TOTAL	100%	100%

Total Assigned - 836  
 Total Sampled - 559  
 Percent of Assigned - 67%

## CAREER LADDER STRUCTURE

The job structure of the Electric Power Line career ladder was determined on the basis of similarity in tasks performed by incumbents in the field. The computer printouts used in this part of the analysis helped identify: (1) tasks which tend to be performed by a group of incumbents; (2) the breadth or narrowness of jobs performed in the field; and (3) tasks and background characteristics which distinguished among different jobs within the career ladder.

Based on task similarity, the clusters of functional jobs performed by the 542X1 career ladder personnel are illustrated in Figure 1. These groups are identified as follows:

- I Power Line Installers/Repairers - GRP071
- II Technical Training Instructors - GRP142
- III Assistant Power Line Installers/Repairers - GRP058
- IV Apprentice Power Line Installers/Repairers - GRP037
- V Air Field Lighting Systems Installers/Repairers - GRP040
- VI Electric Power Line Supervisors - GRP042

The GRP numbers listed are references to computer printed information included for use by classification, training or management personnel. Summaries of representative tasks and background information for all reported groups can be found in Appendix A.

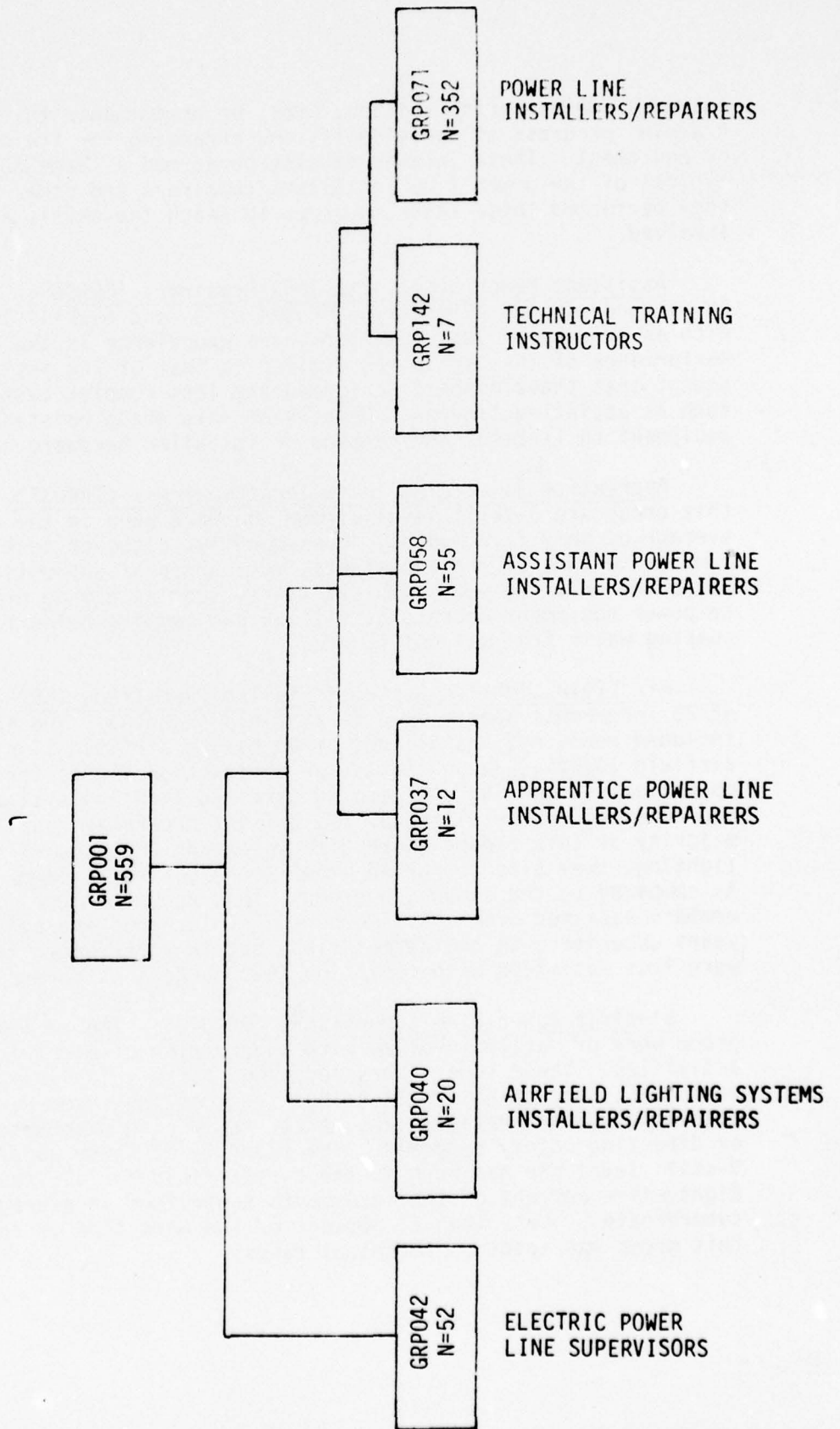
## GROUP DESCRIPTIONS

Power Line Installers/Repairers (GRP071). This group included 352 (63 percent) of the respondents in the survey sample and was composed primarily of 5- and 7-skill level airmen, averaging over four and one-half years in the career field. These personnel performed the full scope of exterior electrical work which included installing and maintaining lighting systems, power line poles, overhead conductors, distribution equipment, underground cables, and inspecting electrical systems and components. Some of the more complex or exacting tasks were: connecting or disconnecting transformers; fusing transformer banks; and removing, installing, or adjusting floodlight or security light fixtures. In addition, almost one-third of the incumbents performed a few supervisory tasks characteristic of first-line supervisors.

Technical Training Instructors (GRP142). The seven members of this small group were assigned to the resident technical training school. Approximately three-fourths of this group were 7-skill level personnel and averaged seven and one-half years in the career ladder. Typical tasks

FIGURE 1

ELECTRIC POWER LINE CAREER LADDER, AFSC 542X1



included administering written, oral, or performance tests; reviewing training progress of individuals; and arranging for training aids, space, or equipment. These incumbents also performed a large number of tasks typical of the power line installers/repairers and other groups; however, they performed these tasks in order to teach the skills and knowledges involved.

Assistant Power Line Installers/Repairers (GRP058). This group of 55 respondents was primarily composed of 3- and 5-skill level personnel with an average of less than two years experience in the career field. Performance of this group was similar to that of the installers/repairers except that these members performed the less complex tasks and functions, such as assisting linemen. Members of this group hoisted materials or equipment to linemen, and removed or installed hardware on crossarms.

Apprentice Power Line Installers/Repairers (GRP037). The 12 members of this group are 3-skill level airmen who have been in the career field an average of only five months. Consequently, although task performance was similar to that of the assistants, this group of apprentice repairers performed only the very simplest tasks, such as giving oral or hand signals to power equipment operators, filling and tamping holes for power poles, pumping water from man holes, etc.

Air Field Lighting System Installers/Repairers (GRP040). This group of 20 incumbents specialized in airfield lighting. The incumbents' tasks included removing, installing, or adjusting airfield light fixtures; inspecting airfield lights, beacon lights, or obstruction lights for condition and operation; inspecting or cleaning airfield lighting system vaults or equipment; and removing or installing airfield light breakaway couplings. Although the majority of this groups' work time was spent on tasks relating to airfield lighting, they also performed other technical tasks common to this ladder. As compared to the other job groups, this group had the largest number of its members assigned overseas. Members of this group averaged three and one-half years experience in the career field but they performed fewer tasks and were less satisfied with their job than members of several other groups.

Electric Power Line Supervisors (GRP042). The 52 incumbents in this group were primarily involved with supervision of electric power line activities. These supervisors performed tasks which included inspecting worksites; conducting or attending staff meetings; coordinating work activities; interpreting plans, sketches, wiring diagrams; and implementing or directing safety programs. The majority of these supervisors held the 9-skill level and has been in the career field for at least 15 years. Eighty-five percent of the incumbents supervised an average of six subordinates. Less than 20 percent of the work time of individuals in this group was spent on technical tasks.

## ANALYSIS OF DAFSC GROUPS

As shown in Table 2, task performance in this career ladder follows the typical career progression, with supervisory tasks increasing with skill level advancement. For example, tasks from the four management supervision duty groups occupy nine percent of the job time of DAFSC 54251 survey respondents, while 30 percent of the 7-skill level, and 72 percent of the 9-skill level incumbents' job time is spent on these duties.

It is interesting to note that very few members performed Duty K, Installing and Maintaining Sirens, Sonic Alarm Systems, Traffic Controllers, and Pole Mounted Cable Antenna Television System Components. No respondents indicated that they performed Duty L, Inspecting and Mounting Cathodic Protection Systems.

Table 3 lists those tasks which most clearly differentiate between the 5- and 7-skill level incumbents in terms of percent members performing tasks. Most of these tasks involve supervision. However, 7-skill level personnel perform nearly all of the technical tasks which the 5-skill level incumbents perform plus supervisory tasks. This trend does not occur when comparing differences between 7- and 9-skill level incumbents. Table 4 lists those tasks that best differentiate between these two groups. Technical tasks were performed by very few 9-skill level personnel. The majority of their time was spent on supervisory tasks.

TABLE 2  
PERCENT TIME SPENT ON DUTIES BY 542X1 DAFSC GROUPS

DUTIES	TOTAL 542X1	DAFSC 54251	DAFSC 54271	DAFSC 54291
A ORGANIZING AND PLANNING	3	1	5	18
B DIRECTING AND IMPLEMENTING	5	3	10	21
C EVALUATING AND INSPECTING	5	3	9	19
D TRAINING	4	2	7	14
E MAINTAINING FORMS, PUBLICATIONS, AND RECORDS	4	3	8	11
F INSTALLING AND MAINTAINING POWER LINE POLES	13	14	8	1
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS	11	12	8	1
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	9	11	8	2
I LAYING AND MAINTAINING UNDERGROUND CABLES	9	10	8	2
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	16	18	11	2
K INSTALLING AND MAINTAINING SIRENS, SONIC ALARM SYSTEMS, TRAFFIC CONTROLLERS, AND POLE MOUNTED CABLE ANTENNA TELEVISION SYSTEM COMPONENTS	1	1	1	-
L INSPECTING AND MAINTAINING CATHODIC PROTECTION SYSTEMS	-	-	-	-
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	7	8	6	2
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	10	10	8	2
O PRACTICING SAFETY AND RENDERING FIRST AID	4	3	5	5

TABLE 3

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 5- AND 7-SKILL LEVEL PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASK	5-SKILL LEVEL	7-SKILL LEVEL	DIFFERENCE
A15 PLAN OR SCHEDULE WORKLOAD	17	75	-58
B13 IMPLEMENT OR DIRECT SAFETY PROGRAMS	24	81	-57
A17 SCHEDULE LEAVES OR PASSES	13	70	-57
C20 WRITE AIRMAN PERFORMANCE REPORTS	22	77	-55
D6 CONDUCT SUPERVISORY ORIENTATION OF NEWLY ASSIGNED PERSONNEL	16	59	-53
C11 INSPECT QUALITY OF COMPLETED REPAIRS	26	79	-53
A2 CONDUCT OR ATTEND STAFF MEETINGS	15	67	-52
B2 ASSIGN WORK TO PERSONNEL	34	86	-52
B6 COUNSEL SUBORDINATES ON JOB PROGRESSION OR CAREER DEVELOPMENT	28	79	-51
D19 REVIEW TRAINING PROGRESS OF INDIVIDUALS	19	70	-51
B7 COUNSEL SUBORDINATES ON PERSONAL OR MILITARY RELATED PROBLEMS	32	82	-50
D11 ESTIMATE INDIVIDUAL TRAINING NEEDS	21	70	-49
D7 COUNSEL AIRMEN ON TRAINING PROGRESS OR INITIATE TRAINING PROGRESS FORMS	23	72	-49
D3 ASSIGN TRAINERS	10	59	-49
B12 ESTABLISH PROCEDURES FOR MAINTENANCE OR UTILIZATION OF TOOLS, EQUIPMENT, OR SUPPLIES	16	65	-49

TABLE 4

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 7- AND 9-SKILL LEVEL PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	7-SKILL LEVEL	9-SKILL LEVEL	DIFFERENCE
N1 CLEAN SHOP OR STORAGE FACILITIES	76	3	73
F20 LOAD, UNLOAD, OR POSITION POLES	73	3	70
N30 SHARPEN GAFFS OF CLIMBING EQUIPMENT	77	8	69
F25 PULL UP, CUT, OR REMOVE OLD POLES	74	5	69
F15 FILL HOLES OR TAMP EARTH AROUND POLES OR GUY ANCHORS USING TAMPING BARS	70	2	68
H26 REMOVE OR INSTALL DISTRIBUTION EQUIPMENT GROUNDS	75	7	68
G18 REMOVE OR INSTALL GROUND SETS ON DE-ENERGIZED LINES	72	5	67
G20 REMOVE OR INSTALL INSULATORS FOR OVERHEAD CONDUCTORS	69	2	67
B18 SELECT MATERIAL OR EQUIPMENT FOR CONSTRUCTION OR MAINTENANCE JOBS	81	61	20
B3 CONDUCT INVENTORIES OF TOOLS, EQUIPMENT, OR SUPPLIES	85	66	19
B17 REVIEW EQUIPMENT AUTHORIZATION LISTS	62	92	-30
A10 ESTABLISH REQUIREMENTS FOR EQUIPMENT, TOOLS, OR SUPPLIES	70	95	-25
A3 DESIGN OR IMPROVE WORK METHODS OR PROCEDURES	75	95	-22

## ANALYSIS OF ACTIVE FEDERAL MILITARY SERVICE (TAFMS) GROUPS

Table 5 reflects the percent time spent performing tasks by enlistment groups. Trends similar to those for DAFSC groups were noted. Percent time spent by the first job group (4-24 mos TAFMS) is nearly identical to the first enlistment group. Incumbents spent most of their time on technical duties during the first three enlistment periods. In the fourth enlistment period, supervisory tasks became prevalent and, as expected, in subsequent enlistments such supervisory tasks continued to increase while time spent on technical duties diminished.

TABLE 5

## PERCENT TIME SPENT ON DUTIES BY 542XI AFMS GROUPS

	FIRST JOB 4-24 MOS AFMS	ENLISTMENT GROUPS					
		TST ENLIST	2ND ENLIST	3RD ENLIST	4TH ENLIST	5TH ENLIST	6TH ENLIST
A ORGANIZING AND PLANNING	1	1	2	3	6	9	14
B DIRECTING AND IMPLEMENTING	2	2	5	7	11	12	13
C EVALUATING AND INSPECTING	3	3	4	5	9	12	13
D TRAINING	1	1	3	7	8	9	11
E MAINTAINING FORMS, PUBLICATIONS, AND RECORDS	1	2	3	5	8	8	11
F INSTALLING AND MAINTAINING POWER LINE POLES	17	16	12	10	8	6	3
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTOR	14	13	11	9	8	6	3
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	10	11	10	9	7	6	4
I LAYING AND MAINTAINING UNDERGROUND CABLES	9	9	10	8	7	6	3
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	17	18	19	15	9	10	3
K INSTALLING AND MAINTAINING SIRENS, SONIC ALARM SYSTEMS, TRAFFIC CONTROLLERS, AND POLE MOUNTED CABLE ANTENNA TELEVISION SYSTEM COMPONENTS	1	1	1	1	1	1	-
L INSPECTING AND MAINTAINING CATHODIC PROTECTION SYSTEMS	-	-	-	-	-	-	-
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	9	8	7	6	5	3	3
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	11	10	9	7	7	3	3
O PRACTICING SAFETY AND RENDERING FIRST AID	3	3	5	4	5	5	5

## COMPARISON OF CONUS/OVERSEAS TASK PERFORMANCE

Table 6 depicts the tasks of greatest difference in percent members performing between the 247 Electric Power Line Specialists (DAFSC 54251) stationed in CONUS and the 70 specialists in the sample who were stationed overseas. A larger percentage of CONUS personnel performed power line tasks than did their overseas counterparts. Other differences between these groups primarily involved the percent members performing specific tasks. Overseas personnel tended to perform fewer tasks. Discussions with subject matter specialists indicated that in many overseas locations, overhead power line maintenance was accomplished by local utility personnel.

TABLE 6

TASKS WHICH MOST CLEARLY DISTINGUISH BETWEEN CONUS AND OVERSEAS 5-SKILL LEVEL PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASK	CONUS	OVERSEAS	DIFFERENCE
G29 RIG CROSSARMS OR OTHER MATERIALS FOR HOISTING	86	43	43
G11 REEL OUT CONDUCTORS FOR OVERHEAD LINES	80	39	41
G22 REMOVE OR INSTALL POTHEDS, TERMINATION KITS, OR WEATHERHEADS	77	37	40
G13 REMOVE, INSTALL, OR REMARK POLE GROUNDS	82	44	38
G33 STRING CONDUCTORS FOR OVERHEAD LINES	75	40	35
H30 REMOVE OR INSTALL POLE MOUNTED TRANSFORMERS	87	53	34
G16 REMOVE OR INSTALL CROSSARMS WHICH SUPPORT ENERGIZED CONDUCTORS USING RUBBER PROTECTIVE EQUIPMENT	41	7	34
M4 INSPECT CONDUCTORS FOR UNIFORM SAG OR SECURITY OF MOUNTING	69	36	33
G6 INSTALL OR MAINTAIN ARMOR RODS OR RIBBONS	47	14	33
G35 TRANSFER DE-ENERGIZED CONDUCTORS FROM OLD POLES TO NEW POLES	66	33	33
G19 REMOVE OR INSTALL HARDWARE ON CROSSARMS	92	59	33
G9 POSITION REELS FOR STRINGING WIRE	79	46	33
G14 REMOVE OR INSTALL CROSSARMS WHICH SUPPORT ENERGIZED CONDUCTORS USING INSULATED AERIAL BUCKETS	55	24	31
N7 INSPECT, CLEAN, OR LUBRICATE WINCHES OR CABLES	70	39	31
O8 PERFORM OR PRACTICE POLE TOP RESCUE PROCEDURES	50	20	30

## ANALYSIS OF TASK DIFFICULTY

From a list of airmen identified for this occupational survey, 50 NCOs in the 7- and 9-skill levels from various commands and locations were selected for rating task difficulty. Tasks were rated on a nine-point scale from very-much-below average to very-much-above average difficulty, with difficulty defined as the average time it takes an incumbent to learn to do the task. Interrater agreement among raters was .94. Ratings were adjusted so that tasks of average difficulty have ratings of 5.00.

Table 7 lists representative examples of the most difficult tasks performed by 60 percent or more of the individuals in the sample and Table 8 lists examples of the least difficult tasks performed.

Several interesting trends were noted in the overall difficulty of installing and maintaining distribution equipment and overhead conductors. Of the 40 tasks relating to installation and maintenance of distribution equipment (duty H) 79 percent were rated above average in difficulty. The installation and maintenance of overhead conductors (duty G) included 68 percent of the tasks which were rated above average in difficulty. Conversely, tasks related to installing and maintaining power line poles (duty F) comprised 72 percent of the tasks rated as below average in task difficulty.

TABLE 7

TASKS ABOVE AVERAGE IN DIFFICULTY WHICH ARE PERFORMED BY  
60 PERCENT OR MORE OF THE SURVEY RESPONDENTS

TASK	DIFFICULTY INDEX	PERCENT MEMBERS PERFORMING
H1 ADJUST TRANSFORMERS OR VOLTAGE REGULATORS	6.2	62
I14 LOCATE SHORTS IN UNDERGROUND SYSTEM CABLES	6.1	64
I13 LOCATE OPEN CIRCUITS IN UNDERGROUND SYSTEM CABLES	6.1	66
I12 LOCATE GROUNDS IN UNDERGROUND SYSTEM CABLES	6.0	64
G2 CONNECT OR DISCONNECT OVERHEAD CONDUCTORS	5.6	70
H30 REMOVE OR INSTALL POLE MOUNTED TRANSFORMERS	5.6	70
O9 PERFORM OR PRACTICE RESUSCITATION	5.6	63
H4 CONNECT OR DISCONNECT TRANSFORMERS	5.5	73
I28 REPLACE DEFECTIVE SECTIONS OF UNDERGROUND SYSTEM CABLES	5.5	64
G17 REMOVE OR INSTALL CROSSARMS WHICH SUPPORT DE-ENERGIZED CONDUCTORS	5.5	60
O5 PERFORM OR PRACTICE CLOSED CHEST CARDIAC MASSAGE	5.5	66
G23 REPLACE OR SPLICE DEFECTIVE SECTIONS OF DE-ENERGIZED BARE OVERHEAD CONDUCTORS	5.4	61
I20 OPERATE POWER WINCH CONTROLS	5.3	61

TABLE 8

TASKS BELOW AVERAGE IN DIFFICULTY WHICH ARE PERFORMED  
BY 73 PERCENT OR MORE OF THE SURVEY RESPONDENTS

TASK	DIFFICULTY INDEX	PERCENT MEMBERS PERFORMING
F25 PULL UP, CUT, OR REMOVE OLD POLES	4.3	77
G19 REMOVE OR INSTALL HARDWARE ON CROSSARMS	4.3	73
F18 INSPECT POLES OR CROSSARMS FOR CRACKS OR DETERIORATION	4.3	75
F16 GIVE ORAL OR HAND SIGNALS TO POWER EQUIPMENT OPERATORS	4.2	84
F1 ALIGN, BRACE AND FACE POLES IN HOLES	4.2	77
G5 HOIST MATERIALS OR EQUIPMENT TO LINEMEN	4.1	79
F15 FILL HOLES OR TAMP EARTH AROUND POLES OR GUY ANCHORS USING TAMPING BARS	3.7	76
H2 CLEAR OR CONTROL VEGETATION OF SUBSTATION GROUNDS, TRANSFORMER PADS, OR RIGHT-OF-WAYS	3.7	76
F7 CUT POLE GAINS OR DRILL BOLT HOLES	3.5	75
J37 REMOVE OR INSTALL FLOOD OR SECURITY LIGHT BULBS	3.4	75
J32 REMOVE OR INSTALL BULBS IN DE-ENERGIZED STREETLIGHT FIXTURES	3.2	75
J21 OPERATE TWO-WAY RADIO SYSTEMS	3.1	79
N14 INSPECT OR CLEAN HANDTOOLS	2.4	78

## COMPARISON OF SPECIALTY TRAINING STANDARD (STS) TO SURVEY DATA

STS 542X1, dated 15 February 1973, was compared to the survey data. Paragraphs 1-4 were not reviewed because of their general applicability to all career ladders. Paragraphs 5, 6, and 7 were also not examined since they were primarily concerned with knowledge levels rather than task performance levels.

There were 47 specific tasks in the survey with 20 percent or more members performing which were not clearly identified in the current STS. These tasks involved installing and maintaining power poles, overhead conductors, underground cables, lighting systems, and inspecting and maintaining electrical system and components. A complete listing of tasks, with percent members performing and task difficulty index, is included in Table 9. These tasks were identified by subject matter specialists from the resident technical training course as tasks not identifiable or listed in the Specialty Training Standard (STS).

TABLE 9

## TASKS NOT IDENTIFIABLE IN SPECIALTY TRAINING STANDARD

	PERCENT MEMBERS PERFORMING	DIFFICULTY INDEX
<u>MAINTAINING FORMS, PUBLICATIONS, AND RECORDS</u>		
E10 COMPLETE MATERIAL CONDITION TAGS	34	3.9
E4 COMPLETE BASE CIVIL ENGINEER WEEKLY WORK SCHEDULE FORMS (AF FORM 561)	24	5.3
<u>INSTALLING AND MAINTAINING POWER LINE POLES</u>		
F36 SIGHT POLES AND GIVE INSTRUCTIONS OR SIGNALS FOR ALIGNMENT	71	4.6
F9 DIG HOLES FOR POLES OR GUY ANCHORS USING POWER EQUIPMENT	70	4.7
F21 MEASURE HOLES OR REMOVE SOIL OR ROCK FROM AUGER BITS	69	3.1
F33 RIG POLES OR EQUIPMENT FOR ERECTION OR REMOVAL	66	4.5
F2 BREAK UP ROCKS OR CONCRETE USING HAND EQUIPMENT	36	4.2
F26 RAISE POLES INTO POSITION BY HAND USING PIKE AND A-FRAME OR CARRIAGE METHODS	28	5.8
F4 BUILD POLE RACKS	26	3.9
F12 ERECT PLATFORMS	22	5.4
<u>INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS</u>		
G5 HOIST MATERIALS OR EQUIPMENT TO LINEMEN	79	4.1
G12 REMOVE FOREIGN OBJECTS FROM OVERHEAD DISTRIBUTION SYSTEMS	61	4.4
G40 TRIM OR CUT TREES USING POWER EQUIPMENT	41	5.2
G10 PREPARE OR INSTALL INSULATING MATERIAL IN POTHEADS	38	5.5
G6 INSTALL OR MAINTAIN ARMOR RODS OR RIBBONS	33	5.3

TABLE 9 (CONTINUED)

	PERCENT MEMBERS PERFORMING	DIFFICULTY INDEX
<u>INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT</u>		
H24 REMOVE OR INSTALL CURRENT TRANSFORMERS	37	6.1
H20 REMOVE OR INSTALL AIR SWITCHES	32	5.9
H23 REMOVE OR INSTALL CIRCUIT COMPONENTS OF OIL CIRCUIT BREAKERS (OCB) RECLOSERS, SECTIONALIZERS, OR AIR SWITCHES	26	6.8
H39 RESEARCH TECHNICAL PUBLICATIONS TO DETERMINE DISTRIBUTION EQUIPMENT INSTALLATION OR MAINTENANCE SPECIFICATIONS	26	5.9
H17 PAINT ENERGIZED HIGH VOLTAGE TRANSFORMERS OR OTHER CIRCUIT COMPONENTS	23	5.8
H11 INSPECT TRANSFORMERS OVERLOAD LIGHTS	23	4.0
H22 REMOVE OR INSTALL CAPACITY BANKS	22	6.1
H29 REMOVE OR INSTALL OCBS	21	6.0
<u>LAYING AND MAINTAINING UNDERGROUND CABLES</u>		
I3 DIG TRENCHES	58	3.3
I35 TAG UNDERGROUND CABLES	39	4.1
I34 SEAL UNDERGROUND SYSTEM CABLE SPLICES	32	5.2
<u>INSTALLING AND MAINTAINING LIGHTING SYSTEMS</u>		
J37 REMOVE OR INSTALL FLOOD OR SECURITY LIGHT BULBS	75	3.4
J27 REMOVE, INSTALL, OR ADJUST STREETLIGHT FIXTURES	71	4.1
J43 REMOVE OR INSTALL RECREATIONAL LIGHT BULBS	65	3.3
J28 REMOVE OR INSTALL AIRFIELD LIGHT BREAKAWAY COUPLINGS	62	3.7
J26 REMOVE, INSTALL, OR ADJUST RECREATIONAL LIGHT FIXTURES	61	4.2
J8 CLEAN RECREATIONAL LIGHT FIXTURES REFLECTORS OR LENSES	45	2.9
J44 REMOVE OR INSTALL RECREATIONAL LIGHT CONTROL COMPONENTS	43	4.8
J14 ISOLATE RECREATIONAL LIGHT CIRCUITS OR EQUIPMENT	40	4.7
J53 TEST LIGHTING SYSTEM RELAYS	34	5.3
J52 TEST INSTALL ISOLATION (IL) TRANSFORMERS	32	4.9
J20 NUMBER AIRFIELD LIGHTS	20	3.4

TABLE 9 (CONTINUED)

	PERCENT MEMBERS PERFORMING	DIFFICULTY INDEX
<u>INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS</u>		
M5 INSPECT FUSE CUTOUPS	74	4.5
M27 VISUALLY INSPECT OCB, RECLOSERS, OR SECTIONALIZERS	44	4.6
M17 INSPECT, TIGHTEN, CLEAN, OR LUBRICATE OCB, RECLOSERS, OR SECTIONALIZER OPERATING MECHANISM COMPONENTS	30	5.5
M2 INSPECT CAPACITY BANKS	25	5.1
<u>INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES</u>		
N1 CLEAN SHOP OR STORAGE FACILITIES	84	2.4
N13 INSPECT OR CLEAN FOUL WEATHER GEAR	55	2.2
N2 DISTRIBUTE MATERIALS FOR CONSTRUCTION OR MAINTENANCE JOBS	49	3.6
N12 INSPECT OR CLEAN FISH TAPES	28	2.1
N11 INSPECT FIREFIGHTING EQUIPMENT	24	3.2
<u>PRACTICING SAFETY AND RENDERING FIRST AID</u>		
O13 TREAT SNAKE OR INSECT BITES	24	5.2

## COMPARISON OF AFM 39-1 JOB DESCRIPTIONS TO SURVEY DATA

Survey results were compared to the AFM 39-1 job descriptions, dated 1 September 1976, for AFSCs 54251, 54271, and 54291. The job descriptions generally reflected an accurate picture of the job performed by survey respondents. However, there was one task performed by over 70 percent of the 5-skill level personnel which should be considered for addition to the job description at the next revision. This task was "perform operator maintenance on high reach and line trucks". Discussion with subject matter specialists in the field also indicated a requirement for a U.S. Government Motor Vehicle Operator's Identification Card (SF Form 46). Consideration should be given to the addition of this requirement, along with identifying a desirable requirement for possession of a civilian driver's license, in the specialty qualification section of the 54251/71 Specialty Description.

The following tasks were performed by less than 15 percent of 54251 incumbents and less than five percent of 54271/91 incumbents: install cathodic protection systems; install and repair siren and sonic alarm systems; and remove and replace components of cable antenna TV systems installed on power poles. Discussion with career field personnel indicated that generally these tasks were performed by Electricians (AFSC 542X0). The previous Occupational Survey Report also identified these tasks.

## COMPARISON OF CURRENT SURVEY TO PREVIOUS SURVEY

The results of this survey were compared to those of Occupational Survey Report 90-542-076, Electrical Power Line Career Ladder, AFSC 542X1, dated 1 June 1972. Similar results were found in the two studies. The comparison revealed the following conclusions:

1. The job groupings in both studies were highly similar with the exception of a cluster of Technical Training Instructors appearing in the latest study.

2. The majority of airmen are still concentrated in a single cluster.

3. The career ladder remains very homogeneous.

4. Job interest, perception of use of talents and training and reenlistment rates for this career ladder in both studies are relatively high compared to other career fields.

5. Job descriptions in AFM 39-1 for AFSCs 54231/51/71 contain references to install cathodic protection systems; install and repair siren and sonic alarm systems; and remove and replace components of cable antenna TV systems installed on power poles. These tasks were deleted from the basic resident technical training course, as recommended by the previous Occupational Survey Report, because of low task performance in the field.

## SUMMARY OF BACKGROUND INFORMATION

Each USAF Job Inventory contains a background information section in which the respondent reports information about himself and his job. This information for the Electric Power Line incumbents is summarized in the following paragraphs.

### Method of Assignment to Career Ladder

As shown in Table 10, 67 percent of the Electric Power Line personnel entered the career ladder after completing resident technical training 3ABR54231, Electric Power Line Specialist. Sixteen percent entered the career ladder by retraining from another AFS. The remaining 17 percent of the incumbents entered the career ladder by the various other routes identified in Table 10.

### Relative Job Satisfaction

Job interest of 542X1 incumbents is reflected in Table 11. Eighty-five percent of the survey respondents found their jobs interesting. This figure was well above the 73 percent figure reported by incumbents in other than first enlistment in 27 other career ladders surveyed during 1976.

### Perceived Utilization of Talents and Training

The DAFSC 542X1 incumbents also indicated high utilization of both talents and training. As reflected in Table 11, at least 86 percent of all survey respondents felt that their talents and training were being utilized fairly well to perfectly. This was somewhat higher than reported for incumbents in other than first enlistment in 20 other career ladders surveyed during 1976.

### Reenlistment Intentions

Reenlistment intentions among survey respondents are shown in Table 12. First-term personnel expressed negative intentions, with 60 percent responding "no" or "probably no". Actual reenlistment rates for AFSC 542X1 personnel exceeded the expressed intentions of the first-term and career incumbents (see Table 13). Although actual reenlistment rates for second-term personnel was slightly lower than the expressed intentions, the four percent difference does not appear to be significant.

### Equipment Items

Survey respondents were asked to check the equipment they used in their present job and also to check the equipment they needed on their present job but do not have. Summaries of responses are presented in Table 14.

TABLE 10  
METHOD OF ASSIGNMENT TO CAREER LADDER  
(PERCENT MEMBERS RESPONDING)

	TOTAL SAMPLE (N=557)	5-SKILL LEVEL (N=317)	7-SKILL LEVEL (N=102)	9-SKILL LEVEL (N=38)
COMPLETED TECHNICAL TRAINING	67	77	26	29
RECLASSIFIED WITHOUT TECHNICAL TRAINING	1	-	3	3
DIRECT DUTY ASSIGNMENT (DDA) WITHOUT BYPASS TEST	7	6	19	5
DDA WITH BYPASS TEST	2	1	1	16
CONVERTED FROM ANOTHER AFS	2	1	7	8
RETRAINED FROM ANOTHER AFS	16	12	37	16
REENLISTED AFTER PRIOR USAF SERVICE OR FROM ANOTHER BRANCH OF SERVICE	3	1	4	21
NOT REPORTED	2	2	3	2

TABLE 11  
JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND  
AND TRAINING FOR 542X1 DAFSC GROUPS  
(PERCENT MEMBERS RESPONDING)

	TOTAL 542X1 (N=557)	DAFSC 54251 (N=317)	DAFSC 54271 (N=102)	DAFSC 54291 (N=38)
I FIND MY JOB:				
DULL	5	4	6	3
SO-SO	10	13	4	8
INTERESTING	85	83	90	89
NOT REPORTED	-	-	-	-
MY JOB UTILIZES MY TALENTS:				
VERY LITTLE OR NOT AT ALL	14	15	12	3
FAIRLY WELL TO PERFECTLY	86	85	88	97
MY JOB UTILIZES MY TRAINING:				
VERY LITTLE OR NOT AT ALL	13	14	12	5
FAIRLY WELL TO PERFECTLY	87	86	88	95

TABLE 12  
 REENLISTMENT INTENTIONS OF SURVEY SAMPLE  
 (PERCENT MEMBERS RESPONDING)

	<u>FIRST-TERM</u> (N=292)	<u>SECOND-TERM</u> (N=87)	<u>CAREER</u> (N=180)
NO OR PROBABLY NO	60	44	31
YES OR PROBABLY YES	39	56	69
NO REPLY	1	-	-

TABLE 13  
 ACTUAL REENLISTMENT RATES FOR 542X1 PERSONNEL  
 FY 76

	<u>FIRST-TERM</u>	<u>SECOND-TERM</u>	<u>CAREER</u>
ELIGIBLE TO REENLIST	65	27	53
ACTUALLY REENLISTED	35	14	49
REENLISTMENT RATE	54%	52%	92%

TABLE 14

EQUIPMENT ITEMS USED OR NEEDED ON PRESENT JOB  
 (TOTAL SAMPLE)  
 (PERCENT MEMBERS RESPONDING)

	<u>USED</u>	<u>NEEDED-BUT NOT AVAILABLE</u>
ADJUSTABLE HOT FUSE PULLERS	50	23
ARMOR ROD TOOL APPLICATOR	7	46
AUXILIARY CROSSARM	38	32
BLOCK AND TACKLE	85	6
BLOW TORCH	47	25
BOLT CUTTERS	89	3
CABLE FAULT LOCATOR	66	23
CABLE PAYOUT REEL	65	20
CABLE PULLING GUIDE	42	33
CANT HOOK	83	4
CHAIN HOIST	77	10
CHAIN SAW, GASOLINE ENGINE	32	47
CIRCUIT BREAKER TEST SET	29	39
CLAMP-ON AMMETER	89	4
CLIMBERS	84	6
COFFIN HOIST	77	10
COMBUSTIBLE GAS DETECTOR	22	55
CONDUCTOR COVERS	67	15
CONDUIT BENDING TOOL	44	30
CONDUIT CUTTING TOOL	42	33
CONDUIT THREADING TOOL	39	35
CRIMPING TOOLS	81	10
CROSSARM GUARD	44	29
CUMALONG	76	10
DITCH DIGGER	21	50
DOUBLE STRING DEAD-END INSULAR TOOL	14	45
EARTH AUGER, TRUCK MOUNTED	80	11
ELECTRIC CAPSTAN	14	44
FORKLIFT	21	40
FOUL WEATHER GEAR	78	13
GASOLINE OPERATED WATER PUMP	62	20
GIN POLES	47	21
GRIP-ALL STICK (SHOTGUN)	86	3
GROUNDING SET	84	7
HANDLINES	89	3
HAND TAMPING TOOLS	82	6
HIGH REACH TRUCK WITH INSULATED BUCKET	80	12
HI-VOLTAGE PHASE TESTER	63	22
HOT STICK TESTER	34	45
HOT TOOL TRAILER	18	51

TABLE 14 (CONTINUED)

	USED	NEEDED -BUT NOT AVAILABLE
HYDRAULIC TAMPERS	47	31
HYDROMETER	18	43
INSULATED PLATFORM	29	40
INSULATED STOOL	24	47
INSULATED BLANKETS	72	16
INSULATOR COVERS	66	15
LADDERS	82	9
LAMP CHANGER STICK	34	37
LINEMAN BOOTS	66	28
LOADBUSTERS	24	42
LOW VOLTAGE CIRCUIT BREAKER TEST SET	28	35
MANUAL DIGGING TOOLS	87	4
MEGGER	88	6
MULTIMETER	88	6
NYLON HOIST	42	34
OHMMETER	84	9
OIL TESTER, DIELECTRIC	67	19
PHASE SHIFTER METER	26	40
PIKE POLE	76	8
POLE GUARD	45	31
POWER METER	28	36
PROTECTED JUMPTERS	52	23
PULIC ADDRESS SET	16	51
RADIO INTERFERENCE LOCATOR	17	52
RECORDING AMMETER	69	17
RECORDING VOLTMETER	65	19
RELAY TEST SET	33	35
RESUSCITATION MANNEQUIN	9	57
ROLLER LINK STICK	19	42
RUBBER GOLVES	86	7
RUBBER SLEEVES	43	37
SAFETY STRAP	84	7
SAFETY GLASSES OR GOGGLES	71	17
SPIRAL LINK STICK	22	40
STRAIN CARRIERS	17	43
STRAIN LINK STICK	17	43
STROBE LIGHT TESTER	64	15
SUSPENSION LINK STICK	18	41
SWITCH STICK	86	2
TIE STICKS	59	18
TOXIC GAS TETECTOR	18	55
TRANSFORMER TEST SET	21	52
TREE TRIMMERS	64	18
TRUCK, LINE MAINTENANCE	83	8
TWO-WAY RADIO	83	8
UNIVERSAL AMMETER HOLDING STICK	49	29
VOLTMETER	87	6
WIRE CUTTERS	84	6
WIRE HOLDING STICKS	38	32
WIRE TONGS	43	28
WIRE TONG SADDLES	41	27

## FINDINGS

1. Deletion of references to cathodic protection systems, siren and sonic alarm systems, and cable antenna TV systems installed on power poles should be considered during the next revision of the Specialty Description for the Electric Power Line Specialist and Electric Power Line Technician (AFSCs 54231/51/71) due to the low percent of incumbents performing these tasks. The Occupational Survey Report of 1 June 1972 recommended that these tasks be eliminated from the basic resident technical training course.
2. The Specialty Training Standard (STS) for the Electric Power Line Specialists and Electric Power Line Technician (AFSCs 54231/51/71) should be reviewed by appropriate personnel.

APPENDIX A

GROUP ID NUMBER AND TITLE: GRP071 - Power Line Installers/Repairers  
 PERCENT OF TOTAL SAMPLE: 63% (N=352)  
 LOCATION: CONUS (80%); Overseas (20%)  
 DAFSC DISTRIBUTION: 54231 (13%); 54251 (67%); 54271 (19%); 54291 (1%)  
 AVERAGE GRADE: 4.1  
 AMOUNT OF SUPERVISION: 32% supervise an average of five subordinates  
 AVERAGE TIME IN CAREER FIELD: 56 months  
 AVERAGE AFMS TIME: 74 months  
 EXPRESSED JOB INTEREST: Dull (3%); So-So (8%); Interesting (89%)  
 PERCEIVED UTILIZATION OF TALENTS: Not At All Or Very Little (10%)  
 Fairly Well To Perfectly (90%)  
 PERCEIVED UTILIZATION OF TRAINING: Not At All Or Very Little (10%)  
 Fairly Well To Perfectly (90%)  
 AVERAGE NUMBER OF TASKS PERFORMED: 206

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	18
F INSTALLING AND MAINTAINING POWER LINE POLES	13
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS	12
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	11
I LAYING AND MAINTAINING UNDERGROUND CABLES	10
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, FACILITIES	10
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	9

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
J37 REMOVE OR INSTALL FLOOD OR SECURITY LIGHT BULBS	97
H4 CONNECT OR DISCONNECT TRANSFORMERS	93
F18 INSPECT POLES OR CROSSARMS FOR CRACKS OR DETERIORATION	93
H10 FUSE TRANSFORMER BANKS	92
F36 SIGHT POLES AND GIVE INSTRUCTIONS OR SIGNALS FOR ALIGNMENT	91
J25 REMOVE, INSTALL, OR ADJUST FLOODLIGHT OR SECURITY LIGHT FIXTURES	91

GROUP ID NUMBER AND TITLE: GRP142 - Technical Training Instructors

PERCENT OF TOTAL SAMPLE: 1% (N=7)

LOCATION: CONUS (100%)

DAFSC DISTRIBUTION: 54251 (29%); 54271 (71%)

AVERAGE GRADE: 5.6

AMOUNT OF SUPERVISION: 29% supervise an average of five subordinates

AVERAGE TIME IN CAREER FIELD: 91 months

AVERAGE AFMS TIME: 125 months

EXPRESSED JOB INTEREST: Interesting (100%)

PERCEIVED UTILIZATION OF TRAINING: Fairly Well To Perfectly (100%)

AVERAGE NUMBER OF TASKS PERFORMED: 151

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS	16
F INSTALLING AND MAINTAINING POWER LINE POLES	14
D TRAINING	13
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	11
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	9
B DIRECTING AND IMPLEMENTING	9

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
D1 ADMINISTER WRITTEN, ORAL, OR PERFORMANCE TESTS	100
D19 REVIEW TRAINING PROGRESS OF INDIVIDUALS	100
F29 RAISE POLES INTO POSITION USING DERRICK AND POWER WINCH METHODS	100
F33 RIG POLES OR EQUIPMENT FOR ERECTION OR REMOVAL	100
G4 FABRICATE, INSTALL, OR REMOVE TIE WIRES	100
D2 ARRANGE FOR TRAINING AIDS, SPACE, OR EQUIPMENT	86

GROUP ID NUMBER AND TITLE: GRP058 - Assistant Power Line Installers/Repairers

PERCENT OF TOTAL SAMPLE: 10% (N=55)

LOCATION: CONUS (80%); Overseas (20%)

DAFSC DISTRIBUTION: 54231 (33%); 54251 (60%); 54271 (7%)

AVERAGE GRADE: 3.3

AMOUNT OF SUPERVISION: 9% supervise an average of three subordinates

AVERAGE TIME IN CAREER FIELD: 23 months

AVERAGE AFMS TIME: 34 months

EXPRESSED JOB INTEREST: Dull (5%); So-So (15%); Interesting (80%)

PERCEIVED UTILIZATION OF TALENTS: Not At All Or Very Little (15%)  
Fairly Well To Perfectly (85%)

PERCEIVED UTILIZATION OF TRAINING: Not At All Or Very Little (15%)  
Fairly Well To Perfectly (85%)

AVERAGE NUMBER OF TASKS PERFORMED: 93

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
F INSTALLING AND MAINTAINING POWER LINE POLES	21
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS	17
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	17
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	12
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	10
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	7
I LAYING AND MAINTAINING UNDERGROUND CABLES	6

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F1 ALIGN, BRACE AND FACE POLES IN HOLES	96
G5 HOIST MATERIALS OR EQUIPMENT TO LINEMEN	96
G19 REMOVE OR INSTALL HARDWARE ON CROSSARMS	93
G20 REMOVE OR INSTALL INSULATORS FOR OVERHEAD CONDUCTORS	84
I22 PUMP WATER FROM MANHOLES	67

GROUP ID NUMBER AND TITLE: GRP037 - Apprentice Power Line Installers/Repairers

PERCENT OF TOTAL SAMPLE: 2% (N=12)

LOCATION: CONUS (92%); Overseas (8%)

DAFSC DISTRIBUTION: 54231 (100%)

AVERAGE GRADE: 2.2

AMOUNT OF SUPERVISION: None

AVERAGE TIME IN CAREER FIELD: 5 months

AVERAGE AFMS TIME: 11 months

EXPRESSED JOB INTEREST: Dull (8%); So-So (17%); Interesting (75%)

PERCEIVED UTILIZATION OF TALENTS: Not At All Or Very Little (33%)  
Fairly Well To Perfectly (77%)

PERCEIVED UTILIZATION OF TRAINING: Not At All Or Very Little (25%)  
Fairly Well To Perfectly (75%)

AVERAGE NUMBER OF TASKS PERFORMED: 65

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
F INSTALLING AND MAINTAINING POWER LINE POLES	23
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	17
I LAYING AND MAINTAINING UNDERGROUND CABLES	15
G INSTALLING AND MAINTAINING OVERHEAD CONDUCTORS	13
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	11
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	7

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F16 GIVE ORAL OR HAND SIGNALS TO POWER EQUIPMENT OPERATORS	100
F15 FILL HOLES OR TAMP EARTH AROUND POLES OR GUY ANCHORS USING TAMPING BARS	92
F1 ALIGN, BRACE, AND FACE POLES IN HOLES	92
I22 PUMP WATER FROM MANHOLES	83
G5 HOIST MATERIALS OR EQUIPMENT TO LINEMEN	83
F36 SIGHT POLES AND GIVE INSTRUCTIONS OR SIGNALS FOR ALIGNMENT	83
J24 REMOVE, INSTALL, OR ADJUST AIRFIELD LIGHT FIXTURES	75

GROUP ID NUMBER AND TITLE: GRP040 - Air Field Lighting Systems Installers/  
Repairers

PERCENT OF TOTAL SAMPLE: 4% (N=20)

LOCATION: CONUS (55%); Overseas (45%)

DAFSC DISTRIBUTION: 54231 (20%); 54251 (70%); 54271 (10%)

AVERAGE GRADE: 3.9

AMOUNT OF SUPERVISION: 10% supervise an average of three subordinates

AVERAGE TIME IN CAREER FIELD: 41 months

AVERAGE AFMS TIME: 59 months

EXPRESSED JOB INTEREST: Dull (15%); So-So (20%); Interesting (65%)

PERCEIVED UTILIZATION OF TALENTS: Not At All Or Very Little (40%)  
Fairly Well To Perfectly (60%)

PERCEIVED UTILIZATION OF TRAINING: Not At All Or Very Little (35%)  
Fairly Well To Perfectly (65%)

AVERAGE NUMBER OF TASKS PERFORMED: 86

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
J INSTALLING AND MAINTAINING LIGHTING SYSTEMS	39
I LAYING AND MAINTAINING UNDERGROUND CABLES	14
N INSPECTING AND MAINTAINING TOOLS, EQUIPMENT, AND FACILITIES	10
M INSPECTING ELECTRICAL SYSTEMS AND COMPONENTS	10
H INSTALLING AND MAINTAINING DISTRIBUTION EQUIPMENT	6

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
J24 REMOVE, INSTALL, OR ADJUST AIRFIELD LIGHT FIXTURES	100
M1 INSPECT AIRFIELD LIGHTS, BEACON LIGHTS, OR OBSTRUCTION LIGHTS FOR CONDITION AND OPERATION	90
M8 INSPECT OR CLEAN AIRFIELD LIGHTING SYSTEM VAULTS OR EQUIPMENT	90
J28 REMOVE OR INSTALL AIRFIELD LIGHT BREAKAWAY COUPLINGS	90
J50 SPLICE AIRFIELD LIGHT CABLES	85
I2 CUT UNDERGROUND CABLES	75
I14 LOCATE SHORTS IN UNDERGROUND SYSTEM CABLES	70

GROUP ID NUMBER AND TITLE: GRP042 - Electric Power Line Supervisors

PERCENT OF TOTAL SAMPLE: 9% (N=52)

LOCATION: CONUS (67%); Overseas (33%)

DAFSC DISTRIBUTION: 54251 (4%); 54271 (29%); 54291 (67%)

AVERAGE GRADE: 6.9

AMOUNT OF SUPERVISION: 85% supervise an average of six subordinates

AVERAGE TIME IN CAREER FIELD: 180 months

AVERAGE AFMS TIME: 222 months

EXPRESSED JOB INTEREST: Dull (4%); So-So (6%); Interesting (90%)

PERCEIVED UTILIZATION OF TALENTS: Not At All Or Very Little (8%)  
Fairly Well To Perfectly (92%)

PERCEIVED UTILIZATION OF TRAINING: Not At All Or Very Little (10%)  
Fairly Well To Perfectly (90%)

AVERAGE NUMBER OF TASKS PERFORMED: 90

TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>AVERAGE PERCENT TIME SPENT BY ALL MEMBERS</u>
B DIRECTING AND IMPLEMENTING	21
C EVALUATING AND INSPECTING	19
A ORGANIZING AND PLANNING	16
E MAINTAINING FORMS, PUBLICATIONS, AND RECORDS	13
D TRAINING	12

REPRESENTATIVE TASKS:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
B14 INSPECT WORKSITES	98
A2 CONDUCT OR ATTEND STAFF MEETINGS	94
B5 COORDINATE WORK ACTIVITIES WITHIN SECTIONS OR WITH OTHER BASE ACTIVITIES	94
B15 INTERPRET PLANS, SKETCHES, WIRING DIAGRAMS, OR SPECIFICATION SHEETS	94
B13 IMPLEMENT OR DIRECT SAFETY PROGRAMS	92
A10 ESTABLISH REQUIREMENTS FOR EQUIPMENT, TOOLS, OR SUPPLIES	92
A12 ESTABLISH WORK PRIORITIES	90